Time elimination in stochastic time series by random walk simulations

A brief report on project undertaken for PHY555

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The project is under guidance of Dr. Arnab Pal. There are currently no other people other than us involved directly with this project. The description of the project is as follows:

Random walk in N-dimensions (N = 1,2,3) where we would be starting with a body in 1D which is allowed only translational movement in one direction , namely x-axis. With the equal probability (here, x with movement in [-1,+1]), the walker (or body) will follow the length of walk as per directions. This function will be iterated number of times to get a consistency in results.

We expect these above task to complete by early week of September.

Further, we will be extending the same to 2D and later to 3D. Simulations of the same will be worked upon in meantime. The addition here, will be a hard restarting of the simulations to eliminate the time expended in some walks when the walker is traversing distance in opposite direction from that of destination. In totality , we would only be interested in walks which takes the minimum time for walks. We would as well be simulating the walk in real time with huge lengths and getting the final position of walker straight away.

The prospective time of the same will be post mid semester exams which shall continue till the last of semester.

Further finding in meantime will be updated and conveyed accordingly .